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TRANSACTIONS
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American PHILOSOPHICAL SOCIETY.

SECT. III.
MISCELLANEOUS PAPERS.

An Account of the Eruption of VESUVIUS, in 1767, communicated in a Letter from an English Gentleman residing at Naples, to JOHN MORGAN, M. D. F. R. S. and Professor of Medicine, in the College of Philadelphia.

Naples, November 3, 1767

S I R,

WE have had a most extraordinary eruption of Vesuvius lately. As I imagine an account of the disturbance it has given us will not be disagreeable to you, I shall therefore do myself the pleasure of communicating to you what I know, and have seen myself, of this surprizing Phænomenon.

THE beginning of it is exactly described in Pliny the younger's letter to Tacitus * The first alarm was taken from

* As it may give the curious reader pleasure to compare the above description with the more striking passages of Pliny the younger's letter, on the same subject, we have here subjoined them.

" Nubes,

from a column of black smoke, thrown out with such violence as to appear like an immense pine, branching out on all sides after a great height of trunk, when the diminution of the force, that threw it out, allowed the air to operate by spreading it. The whole mountain was soon wrapped round with utter darkness; and its place was only to be distinguished by the many streams of fire that were darted in different directions, and made this darkness visible ¶.

It appeared to me very unaccountable at first, but I afterwards found, by the assistance of my glasses, that these different directions were produced by the particular motion impressed upon the fire, as it issued from the several mouths which gave vent to Vesuvius. It was very extraordinary to observe some of these streams descending perpendicularly, whilst others mounted upwards in a strait line. The former appearance was owing to innumerable ignited stones in their fall, after having been thrown from some superior aperture, that acquired such velocity from their weight, and such a blending of light from their proximity, as to seem one impetuous torrent of fire; though on the usual appearance of these falling stones, they are scattered, and are plainly to be distinguished as separate bodies.

ALL this, as a mere object of sight, would rather have been amusing; but a frequency of the most terrible explosions made it very alarming, especially to me, in a house that shakes with the least motion. The noise of the largest cannon fired from the castle, not three hundred yards from me, is a mere whisper to these explosions. My little household had retreated to the rooms backward, built against the hill, and

“ Nubes, incertum procul intuentibus ex quo monte, Vesuvium fuisse postea cognitum est, oriebatur: cuius similitudinem & formam non alia magis arbor, quam Pinus expresse- rit. Nam longissimo velut trunco efflata in altum, quibusdam ramis diffundebatur. Credo quia recenti spiritu erecta, dein senescente eo destituta, aut etiam pondere suo victa, in latitudinem vanecebat, candida interdum, interdum sordida & maculosa, prout terram cineremve sustulerat.” *Plinii Epistol. xvi. lib. vi.*

¶ “ Interim e Vesuvio monte pluribus locis latissime flammæ atque incendia relucebant, quorum fulgor & claritas tenebras noctis excipiebat.

“ Jam dies alibi, illic nox omnibus noctibus nigrior densiorque, quam tamen faces multæ variaque lumina solvebant.” *Ibidem.*

“ Ab altero latere nubes atra & horrida ignei spiritus tortis vibratibus discursibus rupta, in longas flammarum figuras dehiscibat, fulgribus illæ & similes, & majores erant.” *Plinii Epistol. xx. lib. vi.*

and I made most of my observations in the door-way of my newest and thickest wall. One or two, however, the most severe of these shocks, that raised my man, who 'till then had kept by me, from the ground, caused me to hesitate, and think of making a prudent retreat ¶; but it occurred to me on a little reflection, that the streets might have been equally dangerous from mixing with a tumultuous concourse of people, thronging after the pictures of Madona and of the saints carried in procession, with which the whole city was crowded all night: I thought it most prudent, therefore, to keep out of their way. The shocks afterwards abated, or I was more used to them, and a most comfortable ‡ lava made its sally, from a seeming opening of the whole side of the mountain at once, and rushed forward with an impetuosity that, in two hours, brought it within two miles of Portici †, which quieted me for that night. The King was then at his palace there, which Vesuvius seemed to be reclaiming from his Majesty's encroachments. The place was by no means held tenable against him; and the King, the courtiers, and numbers of families, then in these environs at their Villeggiatura §, were put to the rout at midnight: Some of the court thought themselves not secure even when they reached Naples, and, I am told, continued their flight to Caserta *.

THE next day all was quieted by a profuse lava that has filled up the hollow way between the Hermit's ¶ and Vesuvius, of at least an hundred feet in depth.

THE

¶ "In commune consultant, intra tectane subsistant, an in aperto vagentur; nam crebris vastisque tremoribus tecta nutabant, & quasi emota sedibus suis, nunc huc, nunc illuc abire aut referri videbantur." *Plinii Epistol. xv. lib. vi*

‡ The melted fiery matter thrown out by *Vesuvius*, which grows hard as it cools, and appears to be a semi-vitrified substance. It is here called comfortable, because the mountain generally becomes more quiet upon its being cast out.

† *Portici*; a small town on the bay of Naples, at about six miles distance from that city, built on the ruins of, or rather directly over, the antient Herculaneum. His Sicilian Majesty has a palace here, furnished with many curiosities, found in Herculaneum, and frequently keeps his court at Portici.

§ This is an Italian word, which signifies the being in the country, or the time of being in the country to take one's pleasure.

* A town twelve miles from Naples on the contrary side from Vesuvius, where the King sometimes holds his court.

¶ In the solitary place, about half way up Mount Vesuvius, is an hermitage, where those whose curiosity leads them to examine this wonderful Phenomenon generally call, and are provided with refreshments by the hermit.

THE second night, however, was as turbulent at the mountain, but not so alarming at Naples as the first, because the mountain burst sooner, and on the other side of it, from whence a lava equally copious was delivered, and after fewer throes.

THE third day the agitation of the earth and air was very inconsiderable ; but an immense quantity of cinders and ashes filled the whole atmosphere ||, so as to take our bright Sun from us, and to leave us no more of him than we have in London, when thousands of less alarming volcanoes from good kitchens, render the air, in winter, often impervious to any but his strongest rays ; and he appeared all day of the sanguineous colour in which Pliny describes him*.

THE fourth day we had for three hours, or more, one continual thunder, without the terrible explosions however of the first and second nights ; and I took great comfort to myself on seeing the constant course of cinders and ashes thrown up. For, I looked upon it as the effect, if I may use the figure, of a bellows blown by all the winds, that would soon destroy or separate the combustible enemy : Accordingly these ashes were the only inconvenience that remained.

BUT on Sunday, the seventh day, the quantity of ashes that filled the air was so great, that having rode out to take a nearer view of the volcano, I was obliged to gallop home with my eyes shut, as I could no longer open them from the pain these ashes put me to †.

ALL is now quiet, and the Lava on this side is stopped, after laying waste the largest tract of cultivated ground that it has

|| “ Jam navibus cinis inciderat : quo proprius accederet calidior & densior : jam pumices etiam, nigrique & ambusti & fracti igne lapides : jam vadum subitum, ruinaque montis littora obstantia.”

* “ Tandem illa caligo tenuata quasi in fumum, nebulamve decessit : mox dies vevus, sol etiam effulsit, luridus tamen, qualis esse, cum deficit, solet. Occurrabant trepidantibus adhuc oculis mutata omnia, altoque cinere, tanquam nive, obducta.” *linii Epistol. xx. lib. vi.*

† “ Paullum reluxit, quod non dies nobis, sed ventantis ignis indicium videbatur, gnus quidem longius substitit : tenebræ rursus, cinis rursus multus & gravis : hunc entidem assurgentes excutiebamus, operiti alioqui, atque etiam oblixi pondere effecti.” *Plinii Epistol. xx. lib. vi.*

has destroyed at once within this century. The greatest eruptions of it have been in the year 1707, in the year 1737, and this of 1767. I leave your deep naturalists to account for this periodical crisis ; and it may not be the first meer accidental observation that has given birth to a profound system §.

O o

§ Some of the most remarkable eruptions of Vesuvius have happened as follow.

Anno Dom. 76 Mount Vesuvius cast forth such quantities of smoke and flame as to obscure the day, and destroyed the cities of Pompeium and Herculeum.

In the year 80, on the 23d of August, the elder Pliny, in order to be better acquainted with the cause of the extraordinary eruption of Vesuvius, ventured so near that this great naturalist perished in his enquiry.

Anno 472, Vesuvius ejected flames, in such abundance, that they were seen even at Constantinople ; they obscured the sun at noon day, and the fire ravaged and burnt all Campania.

Anno 1007, Vesuvius vomited out so great a quantity of flames, that all the neighbouring country suffered greatly by them.

In the year 1631, Vesuvius threw out flames, in such abundance that upwards of 4000 persons lost their lives, and a large tract of land was destroyed.

In the year 1717, Doctor Berkley, afterwards bishop of Cloyne in Ireland, visited Vesuvius, at least with as much boldness and curiosity as Pliny the Elder. The account given, by the bishop, of that mountain, was communicated to the Royal Society by Dr. Arbuthnot, and is published in the Philosophical Transactions. It is thus described by the bishop. " The other mouth was lower in the side of the same new formed hill : " I could discern it to be filled with red hot liquid matter, like that in the furnace of " a glass house, which raged and wrought as the waves of the sea, causing a short abrupt noise, like what may be imagined to proceed from a sea of quick-silver dashing " among uneven rocks. This stuff would sometimes spew over, and run down the " convex side of the conical hill, and appeared at first red hot ; it changed colour and " hardened as it cooled, shewing the first rudiments of an eruption, or, if I may so say, " an eruption in miniature."

The conflagration in 1731 was so destructive, that it occasioned the following curious inscription, which is placed about three miles distant from Naples, in the road to Vesuvius.

Poster, poster, vestra res agitur.

Dies facem præfert diei ; nudius perendino.

Advortite.

Vicies ab fatu solis, nifabulator historia, arsit Vesuvius,

Immani semper clade hæsitantium :

Ne posthac incertos occupet, moneo.

Uterum gerit mons hic bitumine, alumine, ferro,

Auro, argento, nitro, aquarum fontibus, gravem.

Serius, oculus ignescit, pelagoque influente pariet :

Sed ante parturit, concutitur, concutit solum,

Fumigat, corruscat, flammigerat, quatit

Aerem, horrendum immugit, boat, tonat,

Arceat sinibus accolas.

Emigra dum licit,

Jam Jam enititur, erumpit, mixtum igne

Lacum evomit, præcipiti ruit ille lapsu.

Seramque fugam prævertit.

Si corripit, actum est, periisti.

Anno Salutis 1631,

Tu, si sapias, audi clamantem lapidem.